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ABSTRACT

This paper examines some of the aspects of compliance, its antecedents and consequences, that emerged from a study of 136, 2 1/2 year-old boys. The investigation studied parent-child interaction by means of naturalistic home observation, ratings based on observation and interviews, and experimental procedures. Four compliance criterion measures, including a rating of internalized standards (which was significantly associated with overt compliance) were correlated with other child and parent variables. Compliance was found to be positively correlated with child independence and maturity of speech and negatively with a rating of attachment. Multiple regression analyses of the criteria with parent variables indicated that consistently enforced discipline, psychological rewards, encouragement of independence and maternal play contributed importantly to the positive prediction of compliance, whereas material rewards and physical and psychological punishments were negatively associated with it. A weak association between mother's education and compliance was noted. The findings of the correlational analysis support a cognitive theory of moral development and point to the importance of a consistent parental authority role. A sequence analysis, however, demonstrated effectiveness of 'power assertion' in the immediate stimuli controlling compliance. Implications for early development are discussed. (Author)

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ASPECTS OF COMPLIANCE IN A RECIPROCAL FAMILY SYSTEM*

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This paper examines some aspects of compliance, studied as part of a larger investigation into the development of several social characteristics of the child. The research was based largely on direct observation of parent-child interaction in the home.

Sample.

The sample consisted of 46 sets of same-sex male twins and 44 singletons, a total of 136 boys. Mean age was 32.4 months. Singletons were selected so as to match the social class distribution of the twins, so that this distribution was the same for singletons and twins - two-thirds working class and one-third middle class. Twins were included in the sample to enable us to estimate the genetic contribution to the variance of the social characteristics under study - the genetic analysis will be reported shortly.

Method.

Home Observation. A trained observer visited the home on two afternoons in successive weeks, observing completely unstructured interaction for the three hours preceding the child's bedtime. The behavior of the target child, as well as any behavior of others around him that impinged on him was recorded continuously by dictating the coded statements into a microphone. The code ('PACIC') was adapted from Caldwell's APPROACH code (Caldwell, 1969). Each coded statement described a discrete act by the child or others, e.g., walking, playing with a toy, requesting, etc.

The records of the two home observations were analyzed by computer to yield frequency counts for specified types of behavior. The frequency count that was used as an index of the child's compliance with parents' commands, suggestions, etc., was the 'Comply Ratio'. This is the ratio of all instances of compliance to all instances of compliance plus non-compliance. Various types of behavior of child, mother and father were summed and expressed as rates per minute or as a percent of the total actions of the given agent.

Interviews and ratings.

Each mother was given two interviews, the first one to obtain family, demographic and child history information, the second to elicit the mother's perceptions of the child's characteristics, as well as her own practices and attitudes to child-rearing. Mothers were also asked to write an hour-by-hour account of all the events and incidents concerning the child within a 24-hour period.

Ratings were allotted for various child and parent characteristics. The main observer rated the child and, in order to avoid contamination, a second person, who conducted the interviews, rated the mother. Ratings were overall impressionistic measures, based on the combined evidence of the

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observations, informally assessed, of the 'diary' and of the interviews. The rating for 'Internalized Standards" was devised in order to assess the degree to which the child had made his parents' rules his own and obeyed them without having to be reminded of them. It was based chiefly on interview questions asked of the mother.

Experimental Playroom Tasks and Measures.

An experimental situation in a University playroom was designed to elicit manifestations of compliance, attachment or independence from the child. The compliance score derived from this structured situation did not enter into any broad network of correlations and was therefore eliminated from the regression analysis.

Further details of the procedures are provided in Lytton (1973) and in Lytton and Zwirner (1975).

Correlates and prediction of compliance.

The regression analysis of compliance measures was carried out on the singletons and one of each pair of twins, randomly selected, as the inclusion of both twin partners would have given rise to non-independence of data. The N for this analysis is 90.

The criteria were the comply ratio, based on behavior counts, and ratings of overt compliance and of internalized standards. The intercorrelations of these criteria were .66, .46 and .41 ($p < .001$) and in view of these correlations it was felt appropriate to compute a 'Compliance Composite' via z-scores. The significant correlations between the internalized standards rating and the rating and behavior count of overt compliance also suggest that overt compliance can be considered the outward manifestation and forerunner of internalized control.

The compliance measures show a consistent positive relation with child's independence, but correlations with different measures of attachment fluctuate in direction. As evidenced also by a positive association with speech maturity and speech rate, compliance at this age appears to be a sign of maturity and general competence in living.

Table 1 presents a summary of four multiple regression analyses, one for each compliance measure as a criterion, with parent variables as the predictors. It shows those predictors which yielded an increment in R^2 or had a simple correlation with any of the criteria, significant at the .10 level or better and lists them in the order of the generality of their influence across all criteria, with positive contributions being placed before negative ones. The most important positive predictors of compliance are mother's consistency of enforcement of rules, her encouragement of mature action, use of psychological rewards (praise and approval) and play with the child. The most important negative one is amount of physical punishment by mother. Using data derived from direct home observation, these results are in broad agreement with evidence from other researches, employing different methods.

It should be noted that mother's comply ratio is significantly related to child's, and so is father's comply ratio (not shown here because of missing cases). This suggests that a reciprocal triadic system exists between mother, father and child, in which compliance by one member with the wishes of others encourages similar behavior in the other members. Mother's education, too, contributes significantly to the prediction of the comply ratio, even though it was entered last in the regression analysis.

If we can for the moment assume a direction of influence that runs from parent to child, the findings demonstrate the positive effects of cognitive factors, as well as of positive social reinforcement, and the negative effects of aversive emotional and physical stimuli on the development of moral behavior as an ongoing disposition in the child. The results also point to the importance of a consistent parental authority role.

Controlling Stimuli and Consequences of Compliance and Noncompliance.

Since in our observation data we had available a detailed record of parent-child interaction, we could note which child actions follow which parent actions (and vice-versa) and therefore identify the parent stimuli that control child compliance in the immediate situation, in other words identify the parent stimuli that significantly raise the probability of child compliance above its base rate. In such a sequence analysis we compare the conditional probability of compliance with its unconditional probability (or base rate), as shown in Table 2.

The Table shows that all forms of verbal control are effective controlling stimuli for child compliance (as well as noncompliance), but 'Suggestion' seems to be the most effective form. However, this form of control was coded particularly frequently in play situations and hence its seeming effectiveness is very likely due to the less conflict-laden situations in which it tended to be used. Leaving 'Suggestion' aside, because of the special circumstances of its use, direct command or prohibition appear to be more powerful facilitators of compliance than the use of reasoning. The findings therefore demonstrate the effectiveness of 'power assertion' in securing compliance on the spot.

If we look on child comply as a stimulus, what kind of response will it elicit from mother or father? Because of its complexity, we have not yet set up a sequence analysis that follows a behavior chain from parent command through child comply to succeeding parent response and determines the probability of the last parent response, given the previous two actions. Instead, we have carried out a simple sequence analysis that calculates the probabilities of various types of parent responses, given child 'positive action' or 'negative action' (displayed in Table 3). Various behavioral acts have here been categorized into superordinate categories on an a priori basis, such as 'positive', 'negative' or 'neutral' actions.

We will concentrate on negative action. A hand count for 53 children has shown that 39% of 'negative actions' are instances of noncomply (whining, etc., make up the rest of 'negative actions'). Thus we have an indirect and approximate indication of mother's response to noncomply. The latter follows mother's commands 32% of the time. The most likely response by mother to negative action is no action at all over the next 20 seconds (61% of cases).

However, negative action also boosts the incidence of command-prohibition-reasoning (counted together) considerably over its expected occurrence and this is the most likely response by mother, if any action does occur.

If we arrange mother's possible responses to a negative action in order of probability of occurrence, we get the following:

Mother Response	p of comply after Mother Response
No action	-
Command-prohibition-reasoning	.510
Neutral action	.074
Positive action	.120
Negative action	.127
Suggestion	.580
Physical control	.162

The reciprocal family system is thus built on the expectation of a child's complying with mother's command/prohibition. If this happens, all well and good. If it does not happen - or if there is some other negative action - there does not seem to be strong pressure on mother to do something about it (61% of 'No action'). Her choice of a command, prohibition or reasoning as the preferred definite action is a realistic one, given the high probability of comply after it. But if she does not do that, the probability of her choosing any other given action bears no relation to the probability of a comply following it.

The child by his negative action thus does not trigger off a systematic response and the control system appears to be a very loose one, at least on the surface. Tracing through actual longer noncomply sequences to their apparent conclusion for 53 children, we found that 35% had no visible outcome at all - i.e. the matter was seemingly dropped - and a further 35% eventually ended in the child complying. Only 7% ended in noncomply or negative action by the child. Thus in the great majority of cases, the conflict is resolved or forgotten.

Further analysis of the data will show whether parental response is in fact adapted to the kind of negative action preceding it.

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Table 1

Summary Table
Significance Levels of Increments in R^2 and of Simple Correlations
($p < .10$ or better)

Predictors		Criteria: Compliance Rating		Comply Ratio		Internalized Standards		Compliance Composite	
		Increment in R^2 p	Simple r p	Increment in R^2 p	Simple r p	Increment in R^2 p	Simple r p	Increment in R^2 p	Simple r p
Consistency of enforcement rating	M	.001	.001(+)	.001	.001(+)		.05(+)	.01	.01(+)
Encourage mature action rtg.	M	.05	.01(+)		.05(+)	.01	.01(+)	.05	.01(+)
Psychological rewards rtg.	M	.01	.01(+)	.10	.01(+)				
Maternal play frequency				.01	.01(+)	.10	.10(+)	.10	.10(+)
M Comply ratio				.05	.10(+)				
Paternal suggestion frequency						.05	.05(+)		
Maternal suggestion frequency		.10	(-)				.10(+)		
Restrictions rating	M			.10	.01(+)				
Induction rating	M		.01(+)		.01(+)				.05(+)
Maternal physical punishment frequency		.05	.05(-)		.05(-)				
Material rewards rating	M					.05	.10(-)		
Verbal-psychological punishment rating	M					.10	(-)		
Mother's Education			.05(+)	.05	.01(+)				
Vocabulary IQ			.05(+)				.10(+)		
Twinship. Twin:0, Singleton:1							.05(+)		.05(+)

Note. (+) (-): Simple r is positive (negative).
M = mother

Table 2: Forms of Control as Antecedents of Comply and Noncomply

Child successor	Frequency	Base rate	Parental form of control: Command-Prohibition CP	Command-Prohibition FP	Suggestion CP	Suggestion FP	Reasoning CP	Reasoning FP	No Verbal Control CP	No Verbal Control FP
Mother (n = 136) as antecedent										
N*			10,422		4,638		1,359		59,965	
Comply	0,015	.053	.52**	8.76	.58**	9.88	.46**	7.59	.02**	−.59
Noncomply	5,879	.031	.32**	9.34	.31**	8.88	.31**	8.98	.01**	−.64
Neither	60,490	.321	.16**	−.50	.12**	−.64	.23**	−.27	.97**	2.02
Father (n = 120) as antecedent										
N			4,106		2,093		332		25,381	
Comply	4,562	.024	.60**	23.75	.66**	26.09	.57**	22.53	.02*	−.12
Noncomply	2,031	.011	.28**	25.07	.25**	22.22	.23**	20.19	.01	0.00
Neither	25,319	.134	.12*	−.11	.09**	−.30	.20*	.51	.97**	6.22

Note. CP: conditional probability; FP: facilitating power= (conditional probability − base rate)/base rate. Minus sign for facilitating power indicates antecedent acts as suppressor. The p values indicate difference between conditional probability and base rate (significance test adapted from Goodman, 1965).

* N refers to total number of actions in each antecedent category. Total number of child actions = 188,757.

* $p < .01$.

** $p < .001$.